



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/952,995	03/26/1998	MATS LEJON	70560-2/8242	3266
25269	7590	10/20/2003	EXAMINER	
DYKEMA GOSSETT PLLC FRANKLIN SQUARE, THIRD FLOOR WEST 1300 I STREET, NW WASHINGTON, DC 20005			MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/952,995	Applicant(s) LEIJON ET AL.	
	Examiner Burton S. Mullins	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 26, 27, 29-39 and 41-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 26, 27, 29-39 and 41-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>n/a</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Suspension of Action

1. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-2, 4, 6-9, 12, 14, 19, 22, 26-27, 29-33, 34, 37-39, 41 and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck (US 3,014,139) in view of Elton (4,853,565). Shildneck discloses the power plant having at least one motor essentially as claimed except for the winding having an inner layer having semiconducting properties, an insulating layer surrounding the inner layer and an outer layer having semiconducting properties.

Elton discloses a cable with stranded conductors surrounded by a first inner semiconducting insulation layer (104), an intermediate solid insulation layer (106) and an outer semiconducting insulation layer (110) which is connected to ground. Such an arrangement prevents corona discharge between the cable and the surrounding elements.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided in the machine of Shildneck, an inner layer having semiconducting properties, an insulating layer surrounding the inner layer and an outer layer having semiconducting properties, as disclosed by Elton, in order to prevent corona discharge from the winding.

4. Claims 3, 10 and 35-36 are rejected under 35 U.S. C. 103(a) as being unpatentable over Shildneck in view of Elton ('565) and further in view of Elton (US 4,622,116). Shildneck and Elton ('565) disclose the plant essentially as claimed except for the insulations having the same thermal coefficient of expansion. Elton ('116) teaches that it is well known to use different overlapping insulations with the same coefficient of thermal expansion in order to prevent thermal stress to separate and crack the materials to cause failure of the insulation (see lines 38-44, col.7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the insulation of Shildneck and Elton ('565) such that the different layers of insulation had similar or the same coefficient of thermal expansion, as disclosed by Elton ('116), in order to prevent failure caused by thermal aging and cycling.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck in view of Elton ('565) and further in view of Takaoka (US 5,094,703). Shildneck and Elton substantially teach applicant's invention including a continuous, uninterrupted-turn winding and semi-conductive layers comprising an electrical field confining cover, but do not teach cable windings with plural strands of insulated and uninsulated conductors.

Takaoka teaches a stranded large-sized, power transmission cable comprising a combination of uninsulated stranded conductors and insulated conductors (Figs.7-8, 10&11). The combination of insulated and uninsulated conductors reduces the total amount of insulation needed and reduces the coefficient of skin effect (c.2, lines 16-30).

It would have been obvious to modify Shildneck and Elton and provide insulated and uninsulated conductors per Takaoka since it would have reduced the coefficient of skin effect on the cable as well as the total amount of insulation needed for manufacture.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck and Elton ('565), further in view of Laurell. Shildneck and Elton ('565) disclose the plant essentially as claimed except for providing the cable with a metal screen.

Laurell teaches forming a high voltage cable. Laurell teaches providing a metal screen (5) which surrounds the conductor to provide support and EIVIF shielding.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shildneck and Elton ('565) and provided a metal screen surrounding the cable per Laurell since it would have been desirable to shield the conductor.

7. Claims 15-16 are rejected under 35 U.S. C. 103(a) as being unpatentable over Shildneck in view of Elton ('565) and further in view of Bernhardt. Shildneck and Elton ('565) disclose the plant essentially as claimed except for the specific dimensions of the cable and providing a static machine connected in series to limit the start current. With respect to forming the cable with the specific claimed dimensions, it would have been an obvious matter of engineering design choice to have formed the cable with those specific dimensions, since applicant has not disclosed that those specific values solves any stated problem or is for any

particular purpose and it appears that the invention would perform equally well with a cable having slightly larger or smaller values. One of ordinary skill in the art would design the cable to carry the appropriate amount of current for the desired application.

Bernhardt teaches that it is well known to provide a series connected current limiting device (22) to protect the circuit from fault currents.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided a static machine in series with the connection to the motor of Shildneck and Elton ('565) in order to protect the motor, as disclosed by Bernhardt.

8. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck in view of Elton ('565) and further in view of Hyde and Herr. Shildneck and Elton ('565) disclose the plant essentially as claimed except for connecting the neutral point of the motor to ground through and impedance or directly.

Both Hyde and Herr teach that it is well known to connect the neutral point of a motor to ground. Hyde teaches connecting a sensor device between the neutral and ground, while Herr teaches connecting directly to ground. This helps to protect the motor and reduce harmonics caused by the floating neutral connection.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have connected the neutral point of the machine of Shildneck and Elton ('565) to ground, as shown by Hyde and Herr, in order to protect the machine and reduce harmonics.

9. Claims 20-21 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck in view of Elton ('565) and further in view of Neumeyer. Shildneck and Elton

('565) disclose the plant essentially as claimed except for the motor being connectable to the distribution line.

Neumeyer teaches providing an insulation for a high voltage machine such that it can withstand voltages greater than 36kV. Machines with such an insulation could be directly connected to the distribution lines with the need to step down the voltage.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the machine of Elton ('565) such that it can withstand voltages in excess of 36kV, as disclosed by Neumeyer, in order to allow higher capacity operation of the machine.

Response to Arguments

10. Applicant's arguments filed 8-27-02 have been fully considered but they are not persuasive. Regarding Shildneck teaching only a low voltage machine, the terms "low voltage" and "high voltage" used throughout applicant's argument do not help to convince the examiner of Shildneck's inapplicability. Applicant's specification suggests "high voltage" includes power outputs of between 1 and 300 MW (p.5, line 29). Though Shildneck gives no specific output power levels, this order of magnitude of tens of MW is common amongst "large, turbine-driven generators" disclosed by Shildneck.

In response to applicant's argument that there is no likelihood of success when Elton ('565) is combined with Shildneck, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the

references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Further, Elton's cable 100 of dual-layer semiconductors prevents corona discharge since the layer 110 bleeds off static electrical charge on the exterior of the insulation 106 (c.7, lines 28-33). This would not promote corona discharge, as applicant asserts.

In response to applicant's arguments against the Elton ('116) reference individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Elton ('116) is used to show that one of ordinary skill would have been found it desirable for first and second insulation layers to have the same coefficient of thermal expansion to withstand aging.

The examiner also calls attention to the examiner's further arguments and the board's decision in the related appealed case, U.S. Serial No. 08/973,019. Regarding the issue of cable "flexibility", Elton's windings 50 "initially extend axially and then bend circumferentially so as to provide a connection between one bar and a second circumferentially disposed bar in the stator core" (c.5, line 67-c.6, line 4). The manner of bending is shown in Fig.5. Thus, adequate "flexibility" is provided by such a bend. Also, Elton's teaching at c.8, lines 3-9 that "the semi-conducting layer is a glass fiber which can be chopped, mixed with resin and molded, or blown on any complex shaped substrate [so that] the layer can be placed in intimate contact with substantially all of the exterior surface of the insulator or housing..." suggests that the semi-conducting layer can be "molded" or "blown" onto a cable without

causing cable rigidity. Finally, Elton refers to US 4,510,077 (Elton '077), incorporated by reference therein, for a detailed description of the characteristics of the cable material. Elton '077 teaches that a lubricant may be used in the material "to impart lubrication to and between the individual glass fibers, and as such permits the threads and cloths manufactured from these fibers to be subjected to mechanical stresses as incurred by bending, folding and twisting without breakage of the fibers" (c.4, lines 8-16). Thus, Elton '077 teaches how to make the semi-conductive material flexible.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is (703) 305-7063. The examiner can normally be reached on Monday-Friday from 8:30 AM-5:00 PM EST. The

Application/Control Number: 08/952,995

Page 9

Art Unit: 2834

above number is equipped with voice mail. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez, can be reached on (703) 308-1371.

The fax phone number for Technology Center 2800 is (703) 305-3432. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-0956.



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm

9 October 2003